



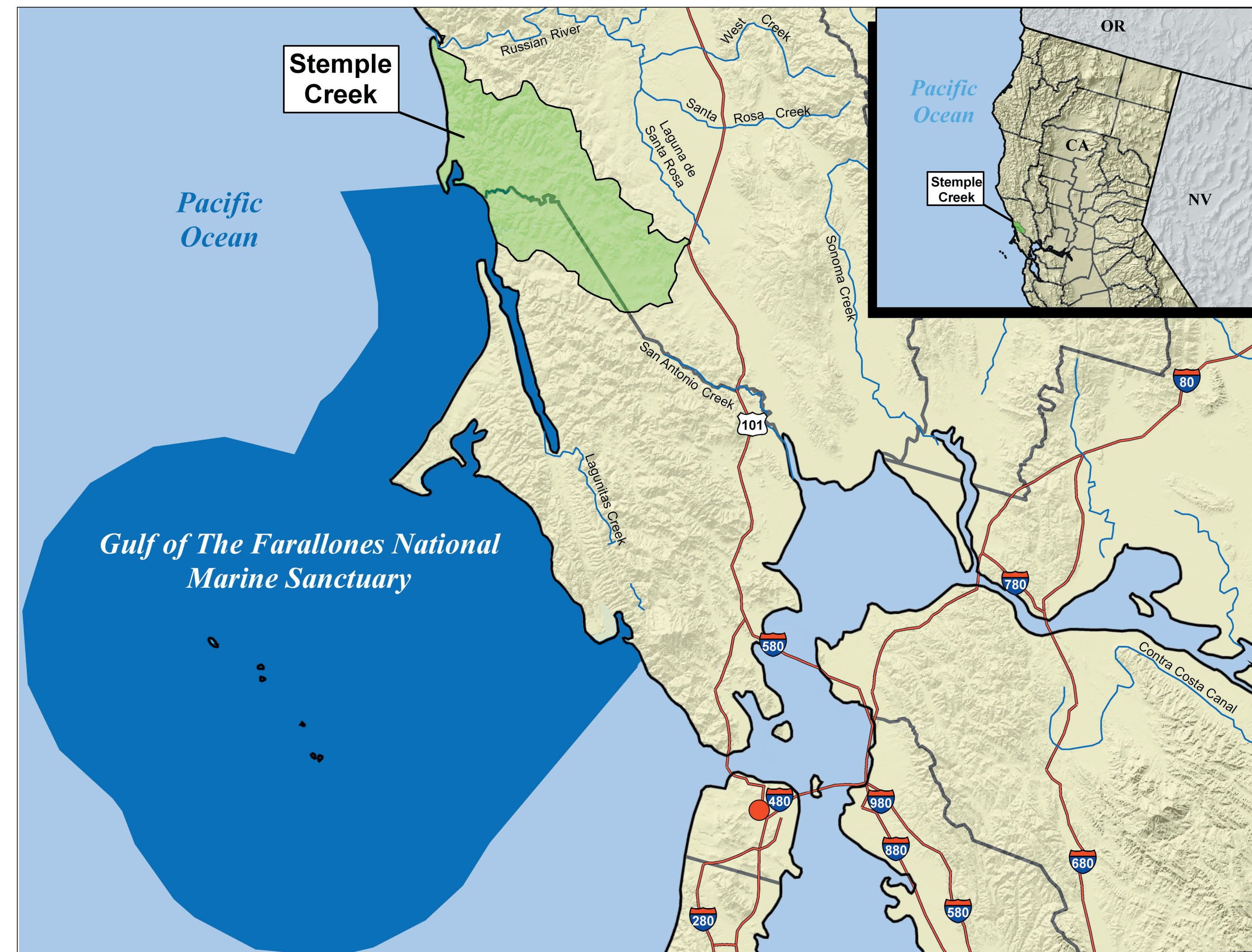
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

Stemple Creek Watershed, California: 2004-2006



An NRCS* Special Emphasis Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Evaluate water quality and wildlife benefits of dairy waste management systems, riparian restoration, and soil erosion control.

Watershed Description

- Sub-watershed, Bodega Bay (Marin and Sonoma Counties)
- Included in the Gulf of the Farallones National Marine Sanctuary.
- 32,980 acres
- 90% grazing land, 20 medium-sized dairies, limited cropland
- California has designated Stemple Creek as an impaired water body for: dissolved oxygen, temperature, pH, ammonia, and sediment.
- Endangered species: California freshwater shrimp

Issues: Loss of riparian vegetation on 70% of waterways, nutrients in runoff from dairy manure, sediment loads to the estuary, Estero de San Antonio.

*Natural Resources Conservation Service

Approach

Water sampling: Dissolved oxygen, temperature, pH, ammonia, and sediment

Watershed models: AnnAGNPS (Annualized Agricultural Non-Point Source), REMM (Riparian Ecosystem Management Model), and CONCEPTS (CONservational Channel Evolution and Pollutant Transport System)

Photo monitoring: Use periodic photography 1) to qualitatively measure habitat improvement and 2) for rapid stream assessments.

Communicating Results

1) Three annual progress reports; 2) technical papers: evaluation of existing data, channel erosion as a component of a watershed sediment budget, nutrient sources, and the effects of best management practices on sediment and nutrients; and 3) final project report.



Upper Reaches of Stemple Creek, stream gradient 0.034; result of fault truncated watershed. Pre ditch condition - marsh.

Collaborators

- Marin and Sonoma County Resource Conservation Districts
- North Coast Regional Water Quality Control Board
- USDA Agricultural Research Service
- University of California Davis
- California Department of Fish and Game
- U.S. Environmental Protection Agency
- Sonoma County Farm Bureau



Landscape of Stemple Creek Watershed.

Contacts

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In the Middle Reaches, Main Stem of Stemple Creek a back hoe pit was dug to characterize the floodplain soil and attempt to find the break between modern sediments and geologic sediments.

Timeline

2003 Initial funding	2004 August CEAP bibliographies	2005 May Wetlands peer review	July Wildlife literature review (program-based)	October Cropland literature reviews Wildlife literature review (practice-based) Wildlife Work Plan	November Wetlands Work Plan	December Draft findings—Prairie Pothole region
2006 February Preliminary habitat quality models— Prairie Potholes wetland region	March Preliminary National Assessment Report	2007 Fall National Assessment Final Report Special Emphasis Watershed reports				